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AUTHOR Bednar, Maryanne R.
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ABSTRACT

A study explored how reflective inquiry could be used to promote preservice teachers' understanding about reading during a one-semester required reading certification course. Subjects, 22 dual certification elementary/special education undergraduate juniors, 27 secondary education undergraduate juniors, and 11 graduate students in a master of education program leading to certification in either elementary/special education or secondary education, wrote a series of reflection writings as a way of encouraging students to address their level of "professional ease." All essays were read blind (without knowledge of group or pre/postdesignation) to identify basic thought units related to knowledge of reading process and reading instruction, and the thought units were listed, compared, and collapsed where necessary to construct a list of thematic statements. Results indicated that subjects: (1) learned the mandated content of the course and became more knowledgeable about reading processes and instruction; (2) were more able to discuss/reflect upon their level of professional knowledge and comfort as the course unfolded; and (3) appeared to have more confidence in their understanding of reading processes and directions to take with assessment and instruction. Findings suggest that, by the end of the semester, there was steady solid progress toward reflective inquiry with considerable difference in what the students knew and in what they thought about what they knew. (Two tables of data are included; 19 references are attached.) (RS)

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Maryanne R. Bednar
La Salle University
Department of Education
215-951-1879

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TEACHER COGNITION: PRE-SERVICE KNOWLEDGE AND REFLECTIONS ABOUT THE READING PROCESS

Teachers' proactive, interactive and reactive responses in learning situations must reflect conscious analysis and decision making based upon theoretical knowledge. Similar to Dewey's (1933) "reflective action" which suggests a dynamic yet careful consideration of the variables present in pre-, during, and post-learning situations, the classroom teacher's cognitive and metacognitive basis for decision making about reading needs to be identified and cultivated.

One attempt to promote both cognitive and metacognitive awareness with pre-service and in-service teachers has been through reflective inquiry (Dewey, 1965; Goodman, 1984; Zeichner, 1981; Ross and Hannay,1986; Zeichner and Listow, 1987; Smith and Pape, 1990). Although there are a number of programs using forms of reflective inquiry, each differs widely in how they either define and/or promote reflective characteristics (Kagan, 1990). Nevertheless, there are several consistent methodological features in teacher education programs emphasizing reflective inquiry. These include journal writing and sharing, field placement analysis, action research, role-playing and micro-teaching.

The need for reflective inquiry in teacher education programs has been asserted (Bullough, 1989; Schon, 1987), but research evidence to support how, when, or where reflective inquiry should be developed tends to be unclear due to either conflicting theoretical positions of reflectivity, methodological issues related to developing and assessing reflective action or a combination of both (Kagan, 1990).

Attempts to examine teacher cognition and by extension their metacognition/reflectivity have been thwarted by using evaluation measures and techniques which are not suited to the task. Kagan (1990), suggesting that quantitative methods are not able to tease out those cognitive and reflective teacher characteristics sought, recommended using qualitative techniques which may be more sensitive and may better grasp the essence of cognitive mediation.

Reading specific cognition studies have focused on pre-service teachers' understanding of reading instruction and reading strategies (Roehler et al., 1987; Roehler, Herrmann & Duffy, 1989; Roehler & Reinken, 1989). Andrews (1990) used reflective inquiry to investigate theory building in methods courses. Most recently, Gordon and Hunsberger (1991) concluded that preservice content area teachers' knowledge and beliefs about reading were influenced positively when the students reflected on reading issues through hands on activities and journal writing.

The purpose of this study was to compare the emergent reading cognitions and reflective inquiry processes of three pre-service teacher groups: elementary/special education majors, secondary education majors and graduate education students. Specifically, this study attempted to explore how reflective inquiry could be used to promote pre-service teachers' understanding about reading during a one-semester required reading certification course.

Method and Procedures

Sixty pre-service teacher education majors from an urban university were included in this study. They included twenty-two dual certification elementary/special education undergraduate juniors (ESE), twenty-seven secondary education undergraduate juniors (SE) and eleven graduate students in a master of education program leading to certification in either elementary/special education or secondary education (GRAD).

Students were enrolled in three separate mandatory developmental reading courses. The thematic content/issues/projects for the three course were consistent but modified when necessary to meet the needs of the certification areas. Class presentations and activities such as micro-teaching consistently focused on addressing and analyzing the reading processes involved in promoting strategic reading behaviors during classroom activities. Lectures, micro-teaching and any hands on activity also included critique and discussion of underlying theoretical rationale as well as the application issues for each reading issue presented.

For this study, reflective inquiry was operationalized as the active on-going self-questioning or analyzing of one's level of understanding and comfort with specific reading related concepts. This view of reflective inquiry was directly introduced, modeled and reinforced. The rationale for using reflective inquiry as a professional tool also was introduced, modeled and reinforced throughout the semester.

On the first day of class, students' cognitions about reading were initially elicited via a free response essay. They were asked to respond to the statement:

> What do you already know about reading? What is reading? How should reading be taught? Present your existing knowledge about reading. Draw from your own experiences, prior classes, readings, movies, etc.

These essays provided entry level estimates of reading process and reading instruction knowledge. Similar exit level essays were obtained at the conclusion of the semester to examine possible changes in reading process and instruction knowledge.

A series of reflection writings were completed through the run of the fifteen week semester as a way to encourage students to address their level of "professional ease" (developing professional knowledge and personal comfort level). One set of writings focused on the three major interactive components of the course: examining reading philosophies to generate a "working" model of reading to be used in the classroom, examining reading assessment in light of the model, and exploring instructional techniques consistent with the model. As part of the closure activity for each of the course components, students were asked to reflect and discuss their level of understanding about the topic. In addition, they were asked to describe how comfortable they felt about their level of knowledge.

A second set of reflection writings were coupled to course projects wherein subjects were asked to reflect about the processes they used to complete the targeted assignments, e.g. administering an I.R.I. and writing a professional report, creating a DRTA, developing an expository unit using reading instruction techniques to introduce reading strategies in content areas.

Due to the dynamics of the class, the graduate students completed only the initial and final essay, and selected reaction responses to class projects.

Qualitative Procedures

For the qualitative analysis, all essays were read blind (without knowledge of group or pre/post designation) to identify basic thought units related to knowledge of reading process and reading instruction. A second reading of each essay established a preliminary reliability check. A second rater read sample essays and identified reading process and instruction thought units presented. Discussion about the thought units ensued with agreement established (94%). Qualitative analysis then recommenced with continued re-readings of the essays to establish and compare the entry and exit level characteristics for the three groups.

For the qualitative analysis, all reflection writings were read a minimum of three times to identify basic trends within and across the groups.

Quantitative Procedures

For quantitative analysis, the thought units generated from the first and second qualitative readings of the essays were listed, compared, collapsed where necessary to construct a list of thematic statements. The essays were re-read and statements were categorized according to the thematic statements present.

Insert Table 1 about here

Table 1 - Samples from the Reader Knowledge and Instruction Thought Unit Classification Scheme

Thought Unit #	Sample Responses
1. Awareness statement	" I really don't know very much about reading."
8. Presentation of reading as information processing	"Reading is information centered"
11. Presentation of reading as dependent upon sound/symbol relationships	"When you look at and sound out the words, you read."
15. Presentation of reading as a bottom-up sequential process	" Reading starts with the alphabet first" "Reading is very step by step in nature."
48. Presentation of reading instruction with cross-curricular emphasis	"Reading should be taught in a wider context." " When I am teaching math, I can still be teaching reading strategies. I didn't think that could be done before."

The course component reflective writings were rated as to level of professional comfort using the following classification scheme:

0 No statement presented or obvious complaint statement
1 Presentation of comfort level as low or problematic
"I'm not real comfortable"
"Don't feel as if I could teach"
"Don't really understand"
2 Presentation of comfort level as moderate
"I get the theory but the application is baffling"
"I could teach this if I had to"
"I understand most of this but I still have some questions"
3 Presentation of comfort level as high
"I understand what is meant by..."
"I could see how this works...
"I've used what we've presented in my field experience and I was real comfortable with it"
"I feel very comfortable ...when I read, I find myself more often looking for (text) structure to help me"

Sample writings were rated by a second reader with 100% agreement.

The project specific reflective writings also were codified using a modification of van Manen's (1977) scheme for appraising degrees or levels of reflectivity.

Insert Table 2 about here

Qualitative Analysis

Qualitative analyses examined initial and exit awareness of reading process and instruction knowledge. In addition, analyses attempted to examine student writings to ascertain reflections about reading process and instruction knowledge or beliefs within and across the three groups of students: ESE (elementary/special education majors), SE (secondary education majors) and GRAD (graduate students).

Initial Essay Analysis

Reading process knowledge

The ESE students appeared to be divided in their view of the reading process. Although many strongly indicated that reading was a meaning centered activity, just as many described reading as either dependent upon visual input only or sound/symbol relationships with no specific reference to understanding the text. Only vague statements were presented to suggest that reading is an active process or that readers were in some way active in the reading process.

Table 2 - Reflection Classification Scheme

Classification	Explanation and Sample Responses
0	Personal complaint "tedious, hard" "hating doing this" This was very time consuming"
1	Technical Issues Reflection focuses on completion of the assigned project; focuses on strengths and/or weaknesses in addressing technical components " I had problems with setting levels.." " It was easy to set up the story grammar..."
2	Application Issues Reflection focuses on application of project to address anticipated future needs as a classroom teacher; focuses on identifying specific classroom issues in relation to the project components; relates current project concerns with practicum experiences past or present "It was very difficult to anticipate what the students' reactions would be because they interpret things differently."
3	Critical Issues: Personal and Project Reflection extends application issue concern to offer alternative, critique of procedure, technique, etc. to address needs suggested by the learner, teacher (self), context, text " This method relies too heavily on memorization of facts as opposed to the comprehension which is the crucial part of reading. It does have some positive aspects. It does provide independent work so the students can learn on their own." " I am the type of person who prefers to have information given to me clearly and explained thoroughly. With this project I had to make decisions on whether to do something one way or another. I had to take risks when planning. Most of all I had to think about the thinking processes that went into teaching students to read expository text..."

[Classification scheme adapted from van Manen (1977)]

> Reading is when an individual is saying to themselves what is presented in front of them.

> Reading comes from sound. Reading is making sense of the symbols and their sounds...but I believe there is a part of the reading process that deals with comprehension. An excellent reader can both read and understand.

> Reading is making the connection between the written word and its meaning. It involves more than just understanding what is written. Reading is gleaning the author's purpose, stated or implied.

Overall, the SE students tended to describe the reading process as a more meaning focused communication process. Few indicated that reading was basically a visual/auditory decoding process. Some indicated awareness that reading may be affected by other factors such as personal experience or the type of materials to be read.

> Basically, reading is a more formalized way of speaking/listening manifested in the written word. It is a means of getting ideas across through a structured method.

> Reading is a process of recognizing and comprehending written language. You see the words, acknowledge their meaning then relate their meaning to already existing knowledge and your own personal experience.

> Reading is the actual understanding of what the eye perceives with emphasis on meaning.

> Reading involves the active transforming of words into meaningful ideas. It involves the active participation of the brain and is therefore subjective to some extent to individual's cognitive structure processing.

Similar to the ESE students, the GRAD students were divided in their view of the reading process. Although most presented reading as a meaning centered communication process, others indicated an emphasis on visual and auditory processes. Similar to the SE students, there was some indication that reading

may be affected by additional factors but no real elaboration was provided.

> Reading is decoding symbols.
>
> Reading begins with decoding, recognition, recall of meaning. The cognitive process is active and integrated, building up levels of meaning and relationships of meaning.
>
> Reading is the end result of learning a complex set of symbols and rules devised to portray communication in written form.

Reading instruction knowledge

The ESE students were consistent in their view of how to teach reading. Although there were some indications that teaching someone to read was complex, most presented a bottom up approach with reading instruction proceeding sequentially from the presentation of alphabet letters, letter/sound relationships, sight words, sentences, paragraphs. Text comprehension generally was not addressed. However, emphasis on oral reading and practice of skills was noted.

> Reading should first be taught by teaching the children alphabet sounds and then move to put the alphabet into words to pronounce.
>
> Reading can not be taught in one simple step. It is a complex process which is learned over time. First one is taught the alphabet sounds and letters, then words, sentences, phrases are taught. It should be important to make sure that one comprehends previous levels before the continuing to the next. Finally, one can be taught to put these sounds, letters and thought together and try to read.

Although the SE students tended to view reading instruction as the responsibility of the elementary school teacher, there was recognition that teaching reading was difficult. Most indicated that reading should be taught with a bottom up approach with "basics taught first and then comprehension and

thinking introduced later". There were references to mechanical aspects such as grammar and spelling as important skills when teaching reading, as well as references to teaching re-reading, using key elements, questioning, and using context cues.

The GRAD students were similar to the ESE students in their instruction knowledge. For the most part, they presented reading instruction using a sequential hierarchy from alphabet to paragraph reading with virtually no suggestion that reading was meaning oriented.

Post Essay Analysis

Reading process knowledge

ESE students indicated that reading is a cognitive interactive communication process with comprehension as the critical focus of reading. There was a definite recognition of the interaction between the reader and the text with references to the reader being "empowered as an active agent via application of metacognitive or executive thinking skills". Differential abilities and varying learning contexts were included as extensions of the basic reader+text interaction. The premise that reading equals thinking was consistently presented.

> Reading, I have learned, is more than sitting down with a child and teaching him/her to sound out words or helping them to do it. It is a process which involves many factors and can be approached in different ways.
>
> Reading is not a rote process rather it is an understanding process. Nothing is gained out of reading if no thinking is occurring in the activity.
>
> About a month ago, my parents criticized me because I didn't know the meaning of a word they said." You're going to be a teacher and teach reading." After this experience I wanted to explain to them that reading is just not being able to give a definition of any given word. I had a sudden urge to go off on a tangent about comprehension and the other important factors we have learned about reading..

Similarly, SE students presented the reading process as an active on-going multi-faceted cognitive process not bound by content or contextual barriers.

> It is our understanding of the symbolic codes as they relate to our previous experiences. The codes are the means to our comprehension but a lot more is going on than the simple physical act of moving our eyes across the paper. When we read we are constantly monitoring our progress through our metacognitive abilities.

> On a literal level, reading is basically the decoding of written words for the purpose of obtaining meaning. However, much more is involved with reading than this simple definition. Reading is a process of interaction between the reader and a host of other factors such as the text, environment, schemata, strategies used.

> When I first entered this course I believed that reading was a combination of brain activity and eye activity with the emphasis on the eyes. However, almost four months later I have revised by opinion. It seems that reading is mostly an activity of the brain and the eyes are simply the means. Furthermore, I have learned that the activity of the brain in reading is not solely unconscious but through learning, various techniques and strategies can become a conscious advantage to the reader. Reading and comprehension are an ongoing process.

The GRAD students also presented the reading process as an active process involving the entire individual to obtain meaning from reading activities.

> I now know not everything about teaching reading but certainly heaps and mounds more than the first day of class. If I remember correctly, I said or at least I hope I said that reading is receiving communication from the printed page in such a way that it is understood. This is reading as opposed to the ability to pronounce a string of words in succession.

> Originally, I felt reading was a mechanical process because that is how it seemed to be taught to me. I now see reading as an activity that needs to involve the whole person as an individual.

Reading instruction knowledge

ESE students overwhelmingly indicated that there was no one best way to teach reading but rather indicated that instruction should be guided by a working model of a reading philosophy which included recognizing reader needs. The idea that reading instruction should be guided by **reader needs and not instructor ease** was frequently reiterated. There was a strong emphasis on strategy base instruction using a variety of instructional techniques to help empower the readers as well as the need to use a wide range of reading materials. Considerable emphasis was placed on extending reading instruction beyond the forty-five minute or so period designated as reading class.

The SE students also indicated a need to have a philosophy guide them in assessment and instruction decisions about their content area students. Similar to the ESE students, there was a consistent reference to using appropriate reading strategies and instructional techniques to help students learn to read so they could then read to learn in the content areas.

GRAD students continued the same theme indicating that instruction should be reader driven but based upon a working model of a reading philosophy. There was the same reference to strategy instruction and instructional techniques to help the students to learn how and when to use strategies as they read.

> As teachers we must help students to develop metacognitve abilities to make them successful readers. We must act as facilitators for helping students develop comprehension abilities. This course taught us some techniques to foster these abilities. We must consider our students and our own styles when developing a reading program. We should not be afraid to change to improve our students and ourselves. (ESE)

> Because the reading process is so much an interaction between the different things (reader, text, context, purpose, strategies), these aspects should be taken into consideration when teaching reading. Everything

> possible should be done to activate the reader's background knowledge so that he/she can enter the process "informed". A nourishing environment should be created in the classroom to foster reading. A text that is clear and organized should be chosen to fit the needs of the targeted class. And most of all, strategies should be modeled for students so that they pick them up for themselves so that they can use them in their everyday lives. More than just modeling strategies, students should be directly instructed when and how to use appropriate strategies for reading. (SE)

Comparison of Reading Knowledge and Instruction Knowledge

The ESE, SE and GRAD students generally were consistent in their end of semester statements for reading process and reading instruction. Each group appeared to have "bought" the major course theme presented during the semester - teachers should use a theoretical basis to make informed decisions about assessment and instruction.

Reflection Writings

One set of periodic reflective writings, linked to class work and critiquing an outside related reading, required students to reflect on their current level of professional knowledge and ease as they progressed through the course components: reading process models, assessment, instruction. Only ESE and SE students writings were included in this analyses.

Writing One: Reading process knowledge and comfort

For the most part, the majority of ESE and many SE students tended to be vague in their reading process reflections. They were able to present characteristics present in the reading models discussed in class or in course readings but offered no or few reflective comments. Some students included statements which suggested that reading reflection was beginning to develop. But many simply presented vague statements citing a level of knowledge and/or comfort without substantiating why they did or didn't feel comfortable with what they knew.

> So far in this class I feel fairly comfortable. (ESE)
>
> I feel less confident than before about my reading level although I am beginning to understand the reading process. (ESE)
>
> I think that sometimes we discuss something and I have a blank and then it is discussed and I will see exactly what was meant. (ESE)
>
> I understand what we are doing in class but I feel absolutely clueless as to how to make it happen. When I look at the factors involved, I feel that I am incapable of reading well myself. (ESE)
>
> The strategic model I know so well I could spit the information back to you but... it doesn't seem like something concrete - something meaningful to me yet. (SE)
>
> I never knew until this class all the thought processes that went into reading. The process has been so unconscious that I never saw it in this perspective. My problem is that I have problems pulling it all together to see the "big" picture. (SE)

Writing Two: Reading assessment knowledge and comfort level

Very different from their statements about reading models and processes, both the SE and ESE students were more profuse in their reflection writings about assessment knowledge and comfort. Both groups tended to present multiple measures of assessment approach as an important issue. They also tended to focus on the completion of a specific assessment assignment (IRI) as part of their knowledge analysis. Here, they specifically critiqued their difficulties with administering, scoring or interpreting data. In addition, both groups stated emphatically their concern with using reading assessment techniques in the field. Frequently, these two issues were included as preliminary points to a personal statement wherein the student indicated a change in belief.

> My reading assessment awareness at this point is better theoretically than realistically. I understand why we assess as teachers and now know ways to go about it. However, at this point, I have not had a chance to implement the knowledge acquired. (SE)

> In assessing my own level of assessing reading, I feel I want to meet the individual needs of each student. When doing the IRI, I found myself wanting to do it differently -- to personalize it more -- maybe by giving him passages to read on something that he enjoys like a hobby or sports. (ESE)

> I can not say that I feel 100% comfortable with assessment and its procedures but I do feel confident enough that when I do begin teaching I will use many different reading assessments and discover which is bets to meet my method of teaching. These past few weeks have given me examples to work with... (ESE)

Reading instruction knowledge and comfort level

As with the assessment component, ESE and SE students appeared comfortable critiquing their reading instruction knowledge strengths and limitations and reflecting about their comfort level in this area. Writings tended to reflect both personal awareness and technical or application issues about the different instructional techniques or strategies. Even more than the assessment writings, both ESE and SE students reflected about how and when they would use their growing reading knowledge.

> I have a fear that I will not be a strong enough model for my students. I wonder if time will permit me to do all of these processes that seem so great... I wonder if students will react to such activities and if they are really implemented. I have had teachers say to me that you never use what you are taught in school and that idea scares me. I want to use it but what if I'm not permitted? (ESE)

> I am pretty comfortable with all of the narrative and expository techniques we have learned throughout the semester. The only confusion I have is the number of different techniques we can help children to use. What if one technique works better with some children but not others? Should we divide up the class according to how comfortable they feel with a certain technique? Which do you do - use all the techniques because each one serves a purpose or should we become selective and analyze the worth of each technique on our own. (ESE)

> I'm not exactly sure where my level of comfort is with the reading techniques that we have discussed. On paper these techniques appear to be very abstract but I'm certain that when they are taken from the paper and put into action they will become easier to understand... The main problem that I have found in understanding content area reading develops from the fact that it's a new way of thinking for me. I never had to reflect before on how reading or even why reading should be taught in the classroom. I have to change my way of thinking to take into consideration why reading instruction is important, how it can be most effective, when to use it, what procedures, techniques and strategies to use and what to do when such strategies and techniques fail.. In essence, learning reading instruction is similar to taking your first philosophy course after twelve years of religion classes. (SE)

DRTA project reflections

Although the ESE and SE students appear somewhat similar in their general instruction knowledge reflective writings, this did not hold constant when the first instruction project reflection writings were examined. Students developed a one to three day action plan/lesson for introducing story grammar (ESE) or text structure (SE) using a Directed Reading-Thinking Activity instruction framework. The ESE students' DR-TA reflections tended to focus upon the completion of the project rather than reading or learning elements that may have been present. In contrast, the SE students focused on reading and learning issues presented by the project. It should be noted that the DR-TA reflection was submitted just prior to the completion of the course component instruction reflection writing

discussed earlier.

> I think a DRTA is very time consuming and would be difficult to prepare for three reading groups. (ESE)

> This was the first time I had to dissect a lengthy expository piece and break it down into its component parts. This was not easy to do but it gave me greater insight into the way expository history texts are set up. This is important because I will be dealing with similar textbooks for a long time ... I discovered that many textbooks are poorly written and are unclear. (SE)

> All the steps in the DRTA might appear to be just another outline but I found it more involved than just an outline. I realized that (all the components) were necessary ingredients in the lesson because while the kids would be reading they would also be thinking why this happened (Industrial Revolution) and examining the outcomes of the events that transpired. (SE)

Mini-Unit Project Reflections

As the final course project, students developed a content area mini-unit using the reading themes developed during the course. The ESE reflection statements written in conjunction with this project were remarkably different from the reflection writings submitted after the DRTA project. Now, both the ESE and SE students consistently were able to critique their own perceived strengths and limitations in understanding and using their reading knowledge. They were more able to reflect and critique perceived strengths and limitations of the reading instruction technique [KWL,KWL+, GRP, Cognitive Mapping, etc.) and strategy they incorporated in their mini-unit.

> To say that the expository unit was tedious and demanding would do it justice. At the same time, to say that it was beneficial and enlightening would not do it justice either. It was difficult because it involved a lot of thought, structure and writing. It was educational because it not only demanded that I understand how the reading techniques, strategies and multiple measures of assessment (principle) work, it

called upon me to incorporate the techniques, strategies and assessment measures logically into a lesson plan....I found that there were a number of problems I never had to face before. The first was selecting a reading technique. Now, I had to choose one that one best fit my subject, students, class situation, the community, etc....After working with the GRP, I think it is highly useful. Because it relies so heavily on student response, it is clearly student oriented. And although it is at first controlled by the teacher, it can be modeled in a way that the students can pick up the technique without ever having to be explicitly instructed about it. Thus the students can concentrate more on the content and strategies and less on the mechanics of the GRP. ... I still have problems with trying to pinpoint the difficulty level the students I am targeting (will face). I automatically assumed that my students would understand how to restructure the information in a compare/contrast or a problem/solution format. ... I finally feel comfortable with comprehension questioning. (SE)

The only information given were guidelines to follow. The rest of the project I had to make decisions on what I was going to do. In the end this really benefitted me since I am the type of person who prefers to have information given to me clearly and explained thoroughly. With this project I had to make decisions on whether to do something one way or another. I had to take risks when planning. Most of all I had to think about the thinking processes that went into teaching students to read expository text. ... It helped me to realize the importance of combining reading when teaching social studies. ... The students are reading their social studies books for understanding and not just to complete the chapter. (ESE)

Discussion of Qualitative Analysis

Reading Process and Instruction Knowledge

Initially, only a few students (ESE, SE, GRAD) indicated that they were unsure or did not know much about the reading process. Most students presented their thoughts about the reading process and reading instruction in what appeared to be confident terms. As a group, more graduate students tended to indicated that they did not feel comfortable about their reading knowledge base but they still presented their views succinctly. By the end of the semester, it was evident that all groups had started to question their views. Common statements in the reflective writings or post-essays indicated that students now felt they knew more about reading but what they knew was different from the beginning of the semester. Many indicated that they felt uncomfortable about their now perceived limited knowledge base.

In the opening essay, the SE students tended to indicate that reading was a cognitive meaning based process whereas the ESE and GRAD students were divided; half indicated that reading was a meaning focused activity while half indicted that reading was a visual/auditory activity with limited or no mention of text understanding. Few SE students presented reading simply as sound/symbol correspondence. When sound/symbol relationships were presented as the important features of reading, text understanding was included. The majority of SE and GRAD students tended to present reading as part of the communication process whereas the ESE students did not. As a group, the SE students tended to recognize that reading may be impacted by other factors. GRADS presented some recognition of this; whereas, the ESE students did not. In the exit essay, all groups presented reading as a dynamic cognitive meaning focused process. In contrast to the previous limited recognition that reading may be influenced by external/internal factors, all groups presented reading as dependent upon at least the interaction of reader, text, context, purposes/goals, and strategies.

As suggested by their initial essay statements, even though the SE students presented a more meaning centered orientation for the reading process, they did not indicate a more meaning focused instruction program. Although the ESE and GRAD students were divided in their interpretation of the reading process as either meaning oriented or skill oriented, both groups were relatively consistent in their sequential bottom up view of how to teach reading. For all groups, the view of reading as meaning appeared lost during the instruction phase. This was radically changed by the end of the semester. Exit essay statements confirmed that students, more decidedly interactive in their approach to reading

instruction, placed priority status on comprehension as the goal of instruction.

Many students indicated that the techniques presented in the class (KWL, KWL+, DR-TA, GRP, Reciprocal Teaching, Cognitive Mapping) were instructional devices to be employed by the teacher to help introduce and develop a range of reading strategies (prediction, personal experience, visualization, text structure, self-questioning, etc.). Although some students presented text comprehension as the primary concern, they were somewhat confused as to how to do this. They appeared somewhat more concerned with knowing the instructional devices and did not recognize the role of the these techniques as basic means to develop strategy knowledge.

Overall, students presented statements to show a realization that using a reading model would guide them in classroom instruction and assessment decision making.

Reflective Development

Initially, the ESE and SE students were very different in the quality and direction of their reflective writings. Of course in each group, there were outliers who were more similar to the other group than their own. The SE students' writings emphasized their concern with reading related issues; whereas, the ESE students' writings initially focused either on personal issues or presented reading related but non-reflective statements. The amount of time the SE students took to write the early semester in-class reflections was indicative of their lengthier more fully developed writings. This difference continued past the mid-semester mark when the DR-TA project was completed. It was at this point, that the two very dissimilar groups (personalities, sex, major, etc.) began to present similar reflective characteristics.

The reflective writings for both groups now focused on concerns raised about the reading content as well as personal concerns with understanding and utilizing this content. Students indicated that "book knowledge" of the reading issues was relatively secure but comfort level with using this knowledge was shaky. While the SE students continued to be reflective in their self-critiques, now the ESE students began to discuss and reflect about specific reading issues. For both groups, the culminating mini-unit project and reflection appeared to help them crystallize both knowledge and application issues and concerns. The reflective writings for this project generally were thoughtfully presented with considerable emphasis on how individual students felt they had used reading theory to guide them.

Physically the writings mirrored this change. Students would present and then cross out their ideas only to rewrite the original with added personal comments, question and/or disagree with the instructor, employ humor to critique themselves, the course and the instructor; however, more frequently, they used the reflection writings as an opportunity to raise questions or concerns about themselves and how they understood the course content. Many comments targeted their fears about upcoming student teaching experiences. As the semester proceeded, more and more frequently, students would include statements reflecting a change in how they perceived themselves as readers and how that knowledge would now make an impact on how they would be as teachers.

Similar to the change noted between the initial and post essays, the ESE and SE students' reflection writings were more closely aligned by the end of the semester.

Quantitative Analysis

Although it is believed that qualitative analysis of student writings is more beneficial in identifying reading process knowledge and reflective characteristics, it is also appreciated that descriptive data may supplement or support those characteristic gleaned. For this reason, the following descriptive information is presented. Data was examined to determine whether there were any significant differences among the groups' responses. Type of reading process and instruction knowledge thought unit used for each group were analyzed. Differences in knowledge, comfort and reflection levels were analyzed.

Reading process and instruction knowledge

There were significant differences in the number of reading thought units presented on the initial and post essays with the SE and GRAD students reporting more discrete thought units on the post essay ($F=2.40$, $df=2,56$, $p. <.004$). In general, there was a difference in type of thought unit presented on the initial essay versus the post essay. Although, some students from the three groups did present reading as a meaning focused activity on the initial essay, the SE students did so significantly more than the other groups ($p. <.01$); however, no difference was noted on the post essay.

A few trends were noted on the initial essay. Although students in each

group presented reading as a visual/symbol dependent activity with little to no reference to meaning, the ESE and GRAD groups did so more frequently. The ESE students presented reading instruction as a structured sequential process more frequently than the other groups (p. <.03).

Two of the most frequently cited thought units presented in the initial essay (reading as a visual process and reading instruction as a step by step process) were not evident in the post essays. Reading as a meaning centered activity, recognition of individual reader differences, reading instruction focused on meaning, awareness of reading strategies, and awareness of reading instructional techniques were the most frequently cited thought units on the post essays.

Course Component Reflection Statements: Knowledge and Comfort Level

Philosophy Process. There was a significant difference between the ESE and SE students reflection writings when rated as low, moderate, or high (p. <.01). Although some ESE statement presented a moderate level of comfort, most were low. In contrast, the SE writings presented a moderate level of comfort with the philosophical component of the course.

Reading Assessment. When assessment reflection writings were rated, no significant differences were revealed. Although a few student statements presented a low level of comfort, most were either moderate to high in this area.

Reading Instruction. Similar to the assessment writings, there were no significant differences in ESE and SE presented levels of comfort for reading instruction with most indicating either moderate to high comfort.

Project Writings: Reflection Levels

Directed Reading-Thinking Project. There was a main effect for group with a significant difference between the ESE and SE reflection levels as rated (See Table 2). SE students' writings presented a reflection level more concerned with application of concepts issues (level 2) while ESE students presented a reflection level concerned more with personal issues and/or complaints (level 0) ($F=54.01$, $df=1,47$, $p <.000$).

Mini-Unit Project. There were no significant differences between the ESE and the SE reflection levels.

Conclusions

Although students began their respective courses with different perceptions of reading and similar bottom up views of how to teach reading, it was expected that they would "learn" the syllabi stated content for the course. Final grades indicated, for the most part, that they did learn the mandated content and comparisons of the initial and exit essays confirm that they did become more knowledgeable about reading processes and instruction.

What is more interesting about the students is their reflective thinking evolution over the semester. What was not certain was how they would respond to the reflective focus of the course and how this may impact what and how they learned. Did they become more reflective and did this assist them as they became more cognizant of reading issues?

How they responded to reflective inquiry writings as a learning tool was somewhat surprising. The reflective writings and essays were not used for grading purposes so the desire to give the instructor what she wanted would not appear valid. The students submitted them upon request and once when the semester events were crowded and it appeared that the instructor had forgotten, the ESE group reminded the instructor that they wanted to do their reflection writing before continuing. A few students, absent during class periods when the in-class writings were scheduled, completed them on their own time and submitted them. They were under no specific obligation to do so. One student's responded, " I know I don't have to do this, but it's helping me to keep straight what I do know and what I think I need to work on".

What became clear was that students were more able to discuss/reflect upon their level of professional knowledge and comfort as the course unfolded. Again, this was not surprising considering a basic human nature principle - the more individuals know about a subject, the more comfortable individuals are discussing what they know. Although the SE students appeared more comfortable doing this earlier on in the course, all students seemed to have more difficult analyzing where they stood in terms of the reading models discussed. As with many education paradigms, when presented, dissected and reconstructed, reading models may be enigmatic to pre-service teachers in their first reading course. The theoretical model building at the beginning of the course may have been somewhat abstract for students to grasp or at least to reflect upon in their writings at that early point in the course. This may suggest one reason why even in-service teachers are reluctant risk takers as reading teachers. They, too, may have had one

course with a brief overview of reading philosophies and models. Armed with limited reading knowledge, it is not surprising that many opt either to stick to what they already know from their experiences in reading or accept a philosophy/model without thorough examination or reflection and concentrate their efforts on the instruction techniques.

When, eventually, the class built reading model was used to provide direction and substance to the practical issues of assessment and instruction, students in this study appeared to have more confidence in their understanding of reading processes and directions to take with assessment and instruction. At these points, students frequently would make references to how they could see the reading process model as the structure upon which assessment and instruction issues were based. In addition, they were willing to take some risks to indicate why they would or wouldn't use specific assessment measures and/or instructional techniques because they confirmed or violated the reading model that was built by the class.

Several basic questions were suggested by this study. How do reflective inquiry processes develop? or how should they be introduced? It would appear that there should be as many answers to this question as there are learners. In this study, reflective writings, specific micro-teaching and hands on activities with teacher directed instruction, modeling and practice were used to promote reflective inquiry processes with students. This worked for these students in a content specific course. Similar to Gordon and Hunsberger's (1991) content area pre-service students, both the ESE and SE students' written comments indicated that the writings, micro-teaching and application of theory projects were valuable in helping them to understand the reading themes presented. As suggested by the qualitative and descriptive data, there was no tremendous leap to higher level reflections by any group. However, by the end of the semester, there was steady solid progress with considerable difference in <u>what</u> the students knew and more importantly in <u>what</u> they thought about what they knew.

Reflective writings tied to specific course components and projects were used as a way to compel students to address both content and personal concerns they might not generally ponder. When done in this way, there appeared to be a natural reason for reflection. Dialogue journals were considered but abandoned. Although their value was recognized, the reflective writings without response appeared to be more in line with what happens to many teachers in real teaching situations. Although many teachers team-teach and discuss issues, many more do not have this opportunity and subsequently analyze events and make decisions in isolation. The reflection writings model, at least, would assist them in

describing, analyzing and reflecting about events. So, this decision was made on purely practical terms to model a professional tool for the future.

Several basic problems also were suggested. Obviously, the initial differences noted between the groups could be a reflection of basic ability levels which was not controlled in the study. Course enrollment was the basic inclusion criterion. Although this is a recognized flaw in the design, perhaps it is less important that it may seem on the surface. Pre-service education courses, like many other majors, appear to enroll a population with a range of abilities. These classes appeared typical in their make up when compared to other education courses in other universities. The purpose of the research was to examine emergent reading knowledge and reflective inquiry and not necessarily to compare the basic ability levels of the students. As suggested by the end of semester data, there were no real qualitative differences between the groups in their reading process and instruction knowledge and no qualitative or quantitative differences in reflection levels for the ESE and SE groups.

Another issue is whether or not these budding views and reflective characteristics were temporal in nature and dead at the end of the course. Or will they develop or at least be maintained when tested by student teaching issues. This was a crucial concern so the ESE and SE students are being monitored during their practicum year and their reading process and instruction knowledge and reflections on the reading process at this stage will be compared to the information obtained for the current study.

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